

REMARKS

Claims 5, 6, 7, 9, 11, 20 and 21 are pending in this application. Reconsideration is requested based on the foregoing amendment and the following remarks.

Claim Rejections – 35 U.S.C. § 103:

Claims 5, 6, 7, 9, 11, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,278,977 to Agrawal et al. (hereinafter "Agrawal") in view of U.S. Patent No. 6,324,495 to Steinman (hereinafter "Steinman"), and further in view of U.S. Patent No. 5,503,249 to Virtamo et al. (hereinafter "Virtamo").

Agrawal shows no "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as acknowledged graciously in the Office Action in section 4.1, at page 3. The Office Action attempts to compensate for this deficiency of Agrawal by combining Agrawal with Steinman.

Steinman, however teaches no "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," either, and thus cannot make up for the deficiencies of Agrawal with respect to claim 21.

In Steinman, rather, events associated with a simulated object are maintained in increasing *time* order by the event queue, not "in a cause-and-effect relationship." In particular, as described at column 1, lines 39-43:

Discrete event simulation of objects on a single digital processor is not very difficult. In the standard approach, all events associated with a simulated object are tagged with a time index, inserted in an event queue, and maintained in increasing time order by the event queue as events in the simulation are scheduled at discrete points in time.

Since, in Steinman, events associated with a simulated object are maintained in increasing time order by the event queue, Steinman is not "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," either, and thus cannot make up for the deficiencies of Agrawal with respect to claim 21 in any case.

Furthermore, in Steinman, the sequence in which events are simulated is defined by the *time* indices, not by "a cause-and-effect relationship." In particular, as described at column 1,

lines 43-47:

Simulation proceeds in the computer by processing the event from the queue having the lowest time index. The resulting simulation of events in sequence is thus defined by the time indices.

Since, in Steinman, the sequence in which events are simulated is defined by the time indices, Steinman is not "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," either, and thus cannot make up for the deficiencies of Agrawal with respect to claim 21 in any case.

Furthermore, in Steinman, the cause-and-effect relationship is the interaction between processing an event and scheduling new events. All Steinman does with this is tag the new events with time indices greater than or equal to the current simulation time index, and insert them into the event queue. Thus, the cause-and-effect relationship merely dictates the *order* in which the new events are placed in the queue, not "first connections to connect the first event of the engineering activity to a set of second events of the engineering activity," as recited in claim 21. In particular, as described at column 1, lines 48-54:

Processing an event can affect the state variables of an object and can schedule new events to occur in the future for one or more simulated objects. This interaction of cause and effect requires that new events generated be tagged with time indices greater than or equal to the current simulation time index. The generated new events are simply inserted into the event queue in their proper time index sequence.

Since, in Steinman, the interaction of cause and effect requires that new events generated be tagged with time indices greater than or equal to the current simulation time index, Steinman is not "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," either, and thus cannot make up for the deficiencies of Agrawal with respect to claim 21 in any case. Thus, even if Agrawal and Steinman were combined, as proposed in the Office Action, the claimed invention would not result.

The Office Action asserts in section 4.1, beginning at the last line of page 3, and continuing in the first paragraph of page 4, that:

It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of Agrawal et al. with the method of Steinman that included connecting a first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship, because processing of an event can affect the state variables of the engineering system and can cause new events to occur in the future for one or more objects in the system; this interaction of cause-and-effect relationship requires that the

new events generated be scheduled to occur at activity time later than current time (CL1, L48-54).

Agrawal, to the contrary, seeks to avoid the modification proposed by the Office Action. Connecting a first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship, in particular, would mean that a process model would have to be defined externally, and a business process would have to be modeled completely and perfectly before hand, i.e. an 'a priori' approach. Agrawal, on the other hand, rejects that approach in favor of an 'a posteriori' approach, which means that it is possible to start already with a rough approximation of a process model. In particular, as described at column 4, lines 19-28:

The current approaches to define a process model are 'a priori' approaches, which means that a process model has to be defined externally and has to model a business process completely and perfectly. The existence of such a process model is the prerequisite for its execution. The current approach in contrast is an 'a posteriori' approach, which means that it is possible to start already with a rough approximation of a process model and the proposed method is able to permanently improve the process model. In an evolutionary process the correct process model will be determined by the proposed method.

Thus, modifying Agrawal as proposed in the Office Action, by making connecting a first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship a prerequisite of execution, would change the principle of operation of Agrawal, in contravention of M.P.E.P. §2143.01. As provided therein:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Since the proposed modification of Agrawal would change the principle of operation of Agrawal, the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*.

Neither Agrawal nor Steinman show "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," as acknowledged graciously in the Office Action in section 4.1, at page 4. The Office Action attempts to compensate for this deficiency of Agrawal by combining Agrawal and Steinman with Virtamo.

Virtamo, however, teaches no "preparing at least one second connection to connect the at least one third event to the first event in a predecessor/successor relationship," either, and

thus cannot make up for the deficiencies of either Agrawal or Steinman with respect to the claimed invention. In particular, there is no second connection between the move event and the stop event in Virtamo, contrary to the assertion in the Office Action. The pass event does not have to happen, so a pass event is not "inherent."

Similarly, there is no second connection between an open event and a close event in Virtamo, either, contrary to the assertion in the Office Action. A passenger does not have to board or deboard, so neither a passenger boarding nor a passenger deboarding is "inherent."

According to M.P.E.P. § 2112(IV):

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

Thus, the fact that a passenger *may* deboard does not establish the Inherency of a passenger deboarding. *In re Rijckaert*.

Furthermore:

"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Thus, the fact that a passenger *may* deboard is not sufficient to establish Inherency. *In re Robertson*. Therefore, since neither Agrawal, Steinman nor Virtamo show "preparing first connections to connect the first event of the engineering activity to a set of second events of the engineering activity in a cause-and-effect relationship," even if they were combined, the claimed invention would not result. Claim 21 as the submitted to be allowable. Withdrawal of the rejection of claim 21 is earnestly solicited.

Claims 5, 6, 7, 9, 11, and 20 depend from claim 21 and add further distinguishing elements. Claims 5, 6, 7, 9, 11, and 20 are thus also submitted to be allowable. Withdrawal of the rejection of claims 5, 6, 7, 9, 11, and 20 is earnestly solicited.

Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all of claims 5, 6, 7, 9, 11, 20 and 21 are allowable over the cited references. Allowance of all claims 5, 6, 7, 9, 11, 20 and 21 and of this entire application is therefore respectfully requested.

Serial No. 09/889,666

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 23 MAR 07

By: 
Thomas E. McKiernan
Registration No. 37,889

1201 New York Avenue, NW, 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501